1. (Not amended) A method for performing textured mapping of a target area, the method comprising the steps of:

receiving input that defines a texture image; and
covering the target area in an aperiodic tiling pattern with tiles generated from said texture image.

2. (Not amended) The method of Claim 1, wherein the step of receiving input that defines the texture image includes the step of scanning one or more texture images into memory.

3. (Not amended) The method of Claim 1, wherein the step of covering the target area includes the steps of:
selecting an aperiodic tiling pattern;
generating a set of textured tiles based on said aperiodic tiling pattern; and
applying the textured tiles to the target area.

4. (Not amended) The method of Claim 3, wherein the step of applying the textured aperiodic tiles to the target area includes the steps of:
covering the target area with one or more aperiodic tiles, wherein the one or more aperiodic tiles are based on the aperiodic tiling pattern; and
mapping a corresponding textured tile to each of the one or more aperiodic tiles.

5. (Not amended) The method of Claim 3, wherein the step of applying the textured tiles to the target area includes the steps of:
generating a tiling, wherein the tiling is associated with tiles based on said aperiodic tiling pattern;
covering the target area with said tiling; and
mapping the textured tiles to the tiles associated with said tiling.

6. (Not amended) The method of Claim 5, wherein the step of generating the tiling includes the steps of:
determining a substitution tiling level; and
performing a tiling substitution based on said substitution tiling level to generate said tiling.

7. (Not amended) The method of Claim 1, wherein the step of receiving input that defines the texture image includes the step of generating the texture image using a computer aided drawing program.

8. (Not amended) A computer-readable medium carrying one or more sequences of instructions for performing textured mapping of a target area, wherein execution of the one or more sequences of instructions by one or more processors causes the one or more processors to perform the steps of:
receiving input that defines a texture image; and
covering the target area in an aperiodic tiling pattern with tiles generated from said texture image.

9. (Not amended) The computer-readable medium of Claim 8, wherein the step of receiving input that defines the texture image includes the step of scanning one or more texture images into memory.

10. (Not amended) The computer-readable medium of Claim 8, wherein the step of covering the target area includes the steps of:
selecting an aperiodic tiling pattern;
generating a set of textured tiles based on said aperiodic tiling pattern; and
applying the textured tiles to the target area.

11. (Not amended) The computer-readable medium of Claim 10, wherein the step of applying the textured aperiodic tiles to the target area includes the steps of:
covering the target area with one or more aperiodic tiles, wherein the one or more aperiodic tiles are based on the aperiodic tiling pattern; and
mapping a corresponding textured tile to each of the one or more aperiodic tiles.

12. (Not amended) The computer-readable medium of Claim 10, wherein the step of applying the textured tiles to the target area includes the steps of:
generating a tiling, wherein the tiling is associated with tiles based on said aperiodic tiling pattern;
covering the target area with said tiling; and
mapping the textured tiles to the tiles associated with the tiling.

13. (Not amended) The computer-readable medium of Claim 8, wherein the step of receiving input that defines the texture image includes the step of generating the texture image using a computer aided drawing program.

14. (Not amended) The computer-readable medium of Claim 12, wherein the step of generating the tiling includes the steps of:
determining a substitution tiling level; and
performing a tiling substitution based on said substitution tiling level to generate said tiling.

15. (Not amended) A system for performing textured mapping of a target area, the system comprising:
a display screen;
a target area on said display screen;

memory storing a textured image; and

a plurality of texture tiles generated from said texture image and arranged on said screen display in an aperiodic pattern that substantially covers said target region.

16. (Not amended) The system of Claim 15, further comprising:

means for selecting said aperiodic pattern

17. (Not amended) An apparatus for performing textured mapping of a target area, the apparatus comprising:

means for receiving input that defines a texture image; and

means for covering the target area in an aperiodic tiling pattern with tiles generated from said texture image.

18. (Not amended) The apparatus of claim 17, wherein said means for covering the target area includes:

means for selecting said aperiodic tiling pattern;

means for generating a set of textured tiles based on said aperiodic tiling pattern; and

means for applying the textured tiles to the target area.

19. (Not amended) The apparatus of claim 18, wherein said means for applying the textured tiles to the target area includes:

means for covering the target area with one or more aperiodic tiles, wherein the one or more aperiodic tiles are based on the aperiodic tiling pattern; and

means for mapping a corresponding textured tile to each of the one or more aperiodic tiles.

20. (Not amended) The apparatus of claim 18, wherein said means for applying the textured tiles to the target area includes:

means for generating a tiling, wherein the tiling is associated with tiles based on said aperiodic tiling pattern

means for covering the target area with said tiling; and

means for mapping the textured tiles to the tiles associated with said tiling.

SUMMARY OF THE REJECTIONS

Claims 1-5, 7-13 and 15-20 have been rejected under 35 U.S.C. § 103(a), as unpatentable over U.S. Patent No. 5,956,043 issued to Jensen ("*Jensen*"). Claims 6 and 14 have been rejected under 35 U.S.C. § 103(a) as unpatentable over *Jensen* as applied to claims 1 and 8 and further in view of U.S. Patent No. 5,226,175 issued to Deutsch et al. ("*Deutsch*"). The rejections are respectfully traversed.

REVIEW OF THE PRIOR ART: *JENSEN*

A review of *Jensen* will significantly aid the understanding of that reference with respect to the application since it is respectfully submitted that *Jensen* does not disclose or suggest the invention as claimed. Therefore, before addressing the "Response to Arguments" portion of the Final Office Action and the individual rejections of the claims in detail, this response will first discuss the disclosure of *Jensen*.

Jensen is concerned with how to produce a rotated textured tile that is to be reproduced in a period tiling pattern so as to eliminate the seams between repeated tiles that are apparent in the prior art. (*See* Col. 2, lines 57-67; Col. 3, lines 9-10; FIG. 9.) The approach disclosed in *Jensen* begins with an unrotated textured tile, such as that shown in FIG. 12. (*See also* Col. 3, line 13.) At least part of the unrotated textured tile is repeated in a periodic pattern to create a supertile, such as that shown in FIG. 13. (*See also* Col. 3, lines 13-15; Col. 6, lines 37-46.) The supertile is rotated from an initial angle theta (θ) through an additional angle, such as the angle delta (Δ) shown in FIG. 14. (*See also* Col. 3, lines 15-16; Col. 6, lines 29-30, 48-50.) An X-period and a Y-period are selected for the x-axis and y-axis. (Col. 3, lines 16-17.) The X-period and Y-period

are used to define a subtile of the rotated supertile so as to provide a specified degree of seamless tiling when the subtile is tiled in a periodic pattern. (Col. 3, lines 17-19.)

Selecting the period for each axis is described in *Jensen* with respect to FIG. 15 through FIG. 19 and the corresponding discussion in Col. 7, line 26 through Col. 10, line 10. In step 1504, pixel values in a portion of the rotated supertile along a selected axis are obtained. Col. 7, lines 41-42. (*See also* FIG. 14.) In step 1508, a window is identified, which defines a set of reference pixels. (Col. 7, lines 55-57.) The pixels in this "reference" window along the axis are used for comparison to a window that is repeatedly repositioned along the axis. (Col. 8, lines 1-3.) At each successive position of the window, the pixels are compared to the reference pixels to determine the window position that gives the best fit in terms of seamless tiling. (Col. 8, lines 3-7.) The period for the axis is determined based on the point at which the best fit is found, and the period is defined as the distance along the axis between the reference and best fit window positions. (Col. 8, lines 7-10.)

Steps 1512 through 1520 concern the criteria for selecting the window and choosing the best fit criteria. (Col. 8, lines 19-20; FIG. 15.) In step 1512, a numeric tolerance is chosen for determining whether a pixel in the repositioned window is sufficiently close in value to the corresponding pixel in the reference position. (Col. 8, lines 20-25.) In step 1514, a metric, or method, for measuring the difference between pixels is chosen. (Col. 8, lines 34-35.) In step 1516, an offset is chosen, which represents the difference between the reference position of the window and the next window position. (Col. 8, lines 50-53.)

In step 1518, a slide increment is chosen, which "represents the distance between the offset position of the window and each successive position of the window until a period is selected or the window and best fit criteria are adjusted." (Col. 8, lines 59-63.) The slide

increment may be one pixel or it may be one sampling increment, as chosen in step 1520. (Col. 8, line 65 - Col. 9, line 1.) In step 1522, the window is repositioned along the axis. (Col. 9, lines 9-10.)

In step 1524, the window pixel values at the new position are compared to the corresponding reference pixel values. (Col. 9, lines 14-16.) If the tolerance criteria is satisfied, then in step 1526, the period is selected as "the distance between the reference position and the current [window] position...For instance, if the left edge of the window is twelve pixels away from the left edge 1402 of the reference window position, then the X-period is twelve." (Col. 9, lines 20-25.) Step 1528 is a repeating step to obtain another period along another axis using some or all of the above steps or a default period from step 1502. (Col. 9, lines 26-31.)

FIG. 16 through FIG. 19 illustrate the sliding window. In FIG. 16, shows a reference position 1602 resulting from step 1504. (Col. 9, lines 50-52.) FIG. 17 shows the window in an offset position 1702 resulting from step 1516. (Col. 9, lines 52-54.) FIG. 18 shows the window in a new position 1802 after being moved by a slide increment 1804 in the positioning of step 1522. (Col. 9, lines 54-56.) Finally, FIG. 19 shows the correspondence between the pixels in reference window 1602 and position 1802. (Col. 9, lines 58-61.)

After selection of the X-period and the Y-period, the rotated textured tile is formed. (Col. 9, lines 66-67.) If the rotated textured tile is to be rectangular, then a rectangle of dimension X-period by Y-period is cut from rotated supertile 1400. (Col. 9, line 67 - Col. 10, line 3.) The portion of rotated supertile 1400 that is cut for the rotated textured tile is defined by the coordinates of the window positions on the x-axis and y-axis that defined the X-period and Y-period, respectively. (Col. 9, lines 3-5.) If the rotated textured tile is to be a square, then the length of the tile's sides are defined by the least common multiple of the X-period and the

Y-period. (Col. 9, lines 5-10.) The resulting tile, whether rectangular or square, will tile seamlessly, according to the selected tolerance criteria. (Col. 9, lines 11-14.)

BRIEF REVIEW OF INDEPENDENT CLAIMS 1, 8, 15, AND 16

Independent Claims 1, 8, 15, and 16 all include either the "aperiodic tiling pattern" or "aperiodic pattern" features. As discussed by the Applicant in the Amendment and Response of September 21, 2000 (filed in response to the Office Action mailed June 21, 2000), "aperiodic" means not periodic, irregular, without periodicity.

DISCUSSION OF THE FINAL OFFICE ACTION'S "RESPONSE TO ARGUMENTS"

The Final Office Action states that in respect to Claims 1, 8, and 15, *Jensen* is interpreted "as disclosing aperiodic tiling patterns because he translates and/or rotates a portion of a supertile, allows successive selection of periods, which identifies an aperiodic tile repetition, along either or both of the X and Y axes and modifies the size and orientation of the tile displayed at the selected period (col. 6, ll. 59-65; col. 7, ll. 4-6, 9-11, 27-32)." The Final Office Action also states that in respect to Claims 3 and 10, *Jensen* is interpreted "as selecting an aperiodic tiling pattern through manipulation of the period of repetition along either of two axes and the size and orientation of the tile placed at the selected period." It is respectfully submitted that a careful reading of *Jensen* shows that this is an incorrect characterization of the disclosure of *Jensen*.

Jensen discloses neither a "successive selection of periods" nor "an aperiodic tiling pattern through manipulation of the period of repetition." This characterization in the Final Office Action appears to mistake (1) the method by which a period along each axis is determined with (2) how tiles are repeated according to the period thus determined. As discussed above, to

identify the period for the axis, *Jensen* uses an iterative procedure using a window of pixels that is successively moved along an axis. Once a match between the pixels in the window and a set of pixels at a reference position is found, the period is set based on the distance in pixels along the axis between the best fit window position and the reference position. (*See* Col. 8, lines 1-10 and FIG. 16 through FIG. 19.) Once the period for each axis is determined in this manner, the rotated textured tile is set to be a rectangle of dimension X-period by Y-period cut from the rotated supertile at coordinates of the window positions giving rise to the period selected for each axis. (Col. 9, line 67 - Col. 10, line 5.)

Neither the portions of *Jensen* cited in the "Response to Arguments" of the Final Office Action, nor any other portion of *Jensen*, support the Final Office Action's characterizations of "successive selection of periods" or "an aperiodic tiling pattern through manipulation of the period of repetition." Each of cited portion of *Jensen* is addressed below.

Col. 6, lines 59-65 states: "Returning to FIG. 11, **an** X-period and **a** Y-period are selected during a selecting step 1106. The X-period represents the distance along the X-axis in FIG. 14 after which values of the **necessary portion of the rotated supertile 1400 begin to repeat**; the Y-period represents a similar distance along the Y-axis. In general, the periods are not exact, in that the repetition of pixel values may be approximate." (emphasis added). This passage clearly states that one X-period is selected and that the X-period is used to determine how much of the rotated supertile along the X-axis is repeated (e.g., tiled in a periodic patter), and likewise that one Y-period is selected for the Y-axis. As discussed above, the rotated textured tile is defined by the X-period and the Y-period. (Col. 10, lines 1-10.) Nothing in this cited passage of *Jensen* discloses, teaches, or suggests either a "successive selection of periods"

or "an aperiodic tiling pattern through manipulation of the period of repetition" as stated in the Final Office Action.

Col. 7, lines 4-6, 9-11, and 27-32 state: "During a producing step 1108, a rotated textured tile is generated using the X-period, the Y-period, and a portion of the rotated supertile 1400...Like the unrotated tile 1200, the rotated textured tile tends to be much smaller than large screen regions such as the desktop...In many cases, a period will be selected along each of two independent axes, and the rotated texture tile produced by the invention will be smaller in both directions than the desktop or other display region. However, the invention may also be used to select a period along only one axis." Again, this passage refers to only one X-period and one Y-period. The passage describes a rotated textured tile based on the X-period, the Y-period, and a portion of the rotated supertile, which as discussed above, results in a rectangular textured tile that has dimensions of X-period and Y-period and the portion of the rotated supertile 1400 defined by the window position used to define the X-period and Y-period. (*See* Col. 10, lines 1-5.) Nothing in this cited passage of *Jensen* discloses, teaches, or suggests either a "successive selection of periods" or "an aperiodic tiling pattern through manipulation of the period of repetition" as stated in the Final Office Action. Therefore, *Jensen* does not disclose, teach, or suggest an "aperiodic" tiling pattern as required by each claim of the application.

In addition, the Final Office Action appears be equating "aperiodic tile repetition" with translation and/or rotations of a supertile, selection of a period on more than one axis, and modification of "the size and orientation of a tile displayed/placed at the selected period." However, as explained in detail below, none of these features of *Jensen* relates to an aperiodic tiling pattern as required by the claims of the application.

The translation and rotation of the supertile in *Jensen* is one step in selecting the period for each axis to define the rotated textured tile that, when repeated in periodic pattern, will be seamless (or at least seamless to the degree corresponding to the specified tolerances). (Col. 10, lines 11-14.) Such translation and rotation in *Jensen* does not disclose, teach, or suggest an "aperiodic" tiling pattern as required by each claim of the application.

In *Jensen*, the selection of a period on more than one axis is used to define the bounds of the rotated textured tile in the same dimensions defined by the axes. (Col. 10, lines 1-10.) For example, a two-dimensional rotated textured tile is defined by two dimensions, which in *Jensen* are the X-period and the Y-period. When the rotated textured tile is used to tile a larger two-dimensional display area, the tile is repeated in a periodic fashion in both the X and Y directions, and if the tile is rectangular, the period in each direction is different. However, the use of a different period along more than one axis as in *Jensen* does not disclose, teach, or suggest an "aperiodic" tiling pattern as required by each claim of the application.

In *Jensen*, the size of a rotated textured tile is defined by the X-period and Y-period. (*See* Col. 10, lines 1-9.) The rotated textured tile is based on the rotation of the supertile from an initial angle theta (θ) through an angle delta (Δ). (Col. 6, lines 29-30, 48-50.) Both the setting of the size of the tile and the rotation of the tile are used to define the rotated textured tile that will have the specified degree of seamless tiling (e.g., that the seams between repetitions of the rotated textured tile will not be observable). (Col. 3, lines 16-20.) However, *Jensen* does not discuss any manipulation or modification of the rotated textured tile's size and rotation once established. Thus, *Jensen* does not disclose, teach or suggest modification or manipulation "the size and orientation of a tile displayed/placed at the selected period" as stated in the Final Office Action. Further, the setting of the size and orientation of the rotated textured tile as in *Jensen*

does not disclose, teach, or suggest an "aperiodic" tiling pattern as required by each claim of the application.

The Final Office Action states that in respect to Claims 4-5 and 11-12, *Jensen* is interpreted "as disclosing mapping textured tiles to the aperiodic tiles because he teaches applying computer graphics operations to each tile placed at the selected period." As discussed above, *Jensen* does not disclose, teach or suggest aperiodic tiles or aperiodic tiling. Further, the graphic manipulations disclosed in *Jensen* are for the generation of the supertile based on periodic repetitions of the original tile 1200 and subsequent rotation of the supertile. (Col. 6, lines 38-51.) *Jensen* discusses that only the portions of the supertile and rotated supertile that lie on the X-axis and Y-axis need to be calculated. (Col. 6, lines 52-58.) As discussed above, the supertile and rotated supertile are used as the starting point for the selection of the period for each axis, which in turn is used to define the final result, the rotated textured tile. (Col. 3, lines 16-19.)

In contrast, Claims 4-5 and 11-12 feature a mapping of textured tiles to aperiodic tiles (or aperiodic tiling). Thus, these Claims require two sets of tiles and a mapping that relates the tiles of one set (the textured tiles) to the tiles of the other set (the aperiodic tiles). For example, as discussed on page 15 of the application, FIG. 9B and FIG. 9C are used to illustrate how textured tiles are mapped to aperiodic tiles. However, in *Jensen* there is no mapping between two sets of tiles, much less a mapping between textured tiles and aperiodic tiles. Further, the Applicant respectfully disagrees with the assertion in the Final Office Action that "applying computer graphics operations to each tile" is a mapping. A mapping defines a relationship between objects and is not the performance of graphical operations on objects. Therefore, *Jensen* does not

disclose, teach, or suggest a mapping between textured tiles to aperiodic tiles as required by Claims 4-5 and 11-12.

Finally, the Final Office Action states that in respect to Claims 6 and 14, *Jensen* "teaches selecting a period indicating non-linear points of repetition of a supertile." The Applicant respectfully submits that careful reading of *Jensen* shows that this characterization is inaccurate. First, *Jensen* discloses a tile 1200 that is periodically repeated along the axes to produce a supertile 1300. (Col. 6, lines 38- 46.) Thus, it is the tile 1200, not the supertile 1300, which is repeated. Second, nothing in *Jensen* discloses, teaches, or suggests "non-linear" repetition of a tile, a supertile, or anything else. Third, the use of a period inherently imparts linearity to the tile being repeated, and thus a period cannot indicate "non-linear points of repetition" as stated in the Final Office Action. Therefore, *Jensen* does not disclose, teach, or suggest an "aperiodic" tiling pattern as required by each claim of the application.

RESPONSE TO REJECTIONS

In light of the discussion above, which explains why *Jensen* fails to disclose, teach, or suggest an "aperiodic" tiling pattern, the specific rejections of the claims in the Final Office Action are addressed below.

Claims 1, 8, 15, and 17

As explained above, it is respectfully submitted that *Jensen* does not disclose the invention as claimed. *Jensen* is concerned with a method for creating rotated texture tiles that can be arranged in a seamless **periodic** pattern. Specifically, *Jensen* teaches taking a small, unrotated tile, then reproducing it to create a larger supertile, then rotating that supertile, determining one or two periods along one or two sets of axes, and using the periods to define a new small, rotated tile that can provide a specified degree of seamless tiling when repeated in a

periodic pattern. (Col. 3, lines 12-19.) Note that the new rotated tile that is created contains the same pattern as the original, except that the pattern or texture is rotated. (Col. 7, lines 13-17.) The method of *Jensen* addresses the problem of being able to see the seams of rotated tiles when they are repeated in a **periodic** pattern, as shown in Figure 9 of *Jensen*. (Col. 2, lines 57-63.)

In contrast to *Jensen*, independent Claims 1, 8, 15, and 17 require ***aperiodic*** tiling patterns. As discussed on pages 10 and 11 in the present application, aperiodic tiling patterns inherently lack translational symmetry and therefore can be used to cover a target area without forming a linear repetition of the tiling pattern. The method of *Jensen* will still leave linear repetitions that can be readily apparent to an observer, both when repeating the original tile to create the supertile and in applying the rotated textured tile. In contrast, the aperiodic tiling approach recited in Claims 1, 8, 15, and 17 provides for tiling a target area with a texture image, such as that shown in Figure 5 of the present application, without creating the type of linear repetitions (e.g., discernable sub-patterns) evident in Figure 2B of the present application.

Please note that *Jensen* does not address the problem of removing linear repetitions among the tiles themselves, such as can be observed in Figure 2A of the present application. By arranging the tiles in an ***aperiodic*** manner as required by the claims of the present application (not the ***periodic*** manner of *Jensen*), those linear repetitions of the tiles are no longer observable, as can be seen in Figure 5 of the present application.

Claim 1 features:

"A method for performing textured mapping of a target area, the method comprising the steps of:

receiving input that defines a texture image; and

covering the target area in an *aperiodic* tiling pattern with tiles generated from said texture image." (emphasis added).

Regarding Claim 1, the Office Action states that *Jensen* discloses "covering a target area in an aperiodic tiling pattern (col. 6, ll. 6, ll. 37-46; col. 7, ll. 4-15)." However, the portion of *Jensen* cited describes a tiling pattern that is ***periodic*** instead of ***aperiodic*** (e.g., not periodic; irregular; without periodicity). For example, *Jensen* states: "A supertile ... may be readily produced by stamping out repeated adjacent copies of the tile" (Col. 6, lines 38-42.) The placement of repeated adjacent copies of a pattern to produce a new pattern produces a linear repetition, and thus the new pattern is periodic. Further, any pattern with linear repetition will remain periodic (e.g. containing linear repetition), irrespective of how the pattern is rotated.

While *Jensen* discloses "a period", this does not relate to the aperiodic tiling patterns required by the claims of the present application. In *Jensen*, a "period" refers to the distance along the specified X- or Y-axis after which the portion of the supertile begins to repeat. (Col. 6, lines 59-64.) This indicates that *Jensen* is making periodic tiling patterns, not aperiodic patterns. *Jensen* does not disclose, teach or suggest the use of aperiodic tiling patterns for covering a target area as required by Claim 1.

Because *Jensen* fails to describe, teach, or suggest covering a target area in an ***aperiodic*** tiling pattern with tiles generated from a texture image, it is respectfully submitted that, for at least the reasons stated above, Claim 1 is allowable over the art of record and is in condition for allowance.

Claims 8, 15, and 17 contain features that are similar to those described above with respect to Claim 1, and in particular Claims 8 and 17 require "an aperiodic tiling pattern..." and Claim 15 requires "an aperiodic pattern..." Therefore, based on at least the reasons stated above,

it is respectfully submitted that Claims 8, 15, and 17 are allowable over the art of record and are in condition for allowance.

Claims 2-7, 9-14, 16, and 18-20

Claims 2-7, 9-14, 16, and 18-20 are dependent upon Claims 1, 8, 15, and 17, respectively, and thus include each and every feature of the corresponding independent claims. Therefore, it is respectfully submitted that Claims 2-7, 9-14, 16, and 18-20 are allowable for the reasons given above with respect to Claims 1, 8, 15, and 17.

In addition, the Office Action cites additional portions of *Jensen* that allegedly disclose an aperiodic tiling pattern, but a careful reading of *Jensen* shows that the cited portions fail to disclose an aperiodic tiling patter. Specifically, regarding Claims 3, 10, and 18 the Office Action states that *Jensen* discloses "selecting an aperiodic tiling pattern (col. 6, ll. 40-46; col. 7, ll. 33-34)." Regarding Claims 4, 11, and 19, the Office Action states that *Jensen* discloses "mapping tiles to the aperiodic tiles (col. 7-8, ll. 55-10)." Regarding Claims 5, 12, and 20, the Office Action states that *Jensen* discloses a "tiling associated with tiles based on the aperiodic tiling pattern (col. 6-7, ll. 59-9)." However, the portions of *Jensen* cited describe a tiling pattern that is ***periodic***, not ***aperiodic***, and how the periods are selected for defining the rotated texture tile that, when repeated in a periodic pattern, provides the specified degree of seamlessness.

For example, *Jensen* states that "the user may wish to stamp out a single row (or column) of long narrow tiles...", (Col. 6, lines 32-34), wherein the use of the phrase "to stamp out" indicates a periodic pattern, not an aperiodic pattern. Similarly, *Jensen* also states the tile "may be readily produced by stamping out repeated adjacent copies..." (Col. 6, lines 41-42), and that "the user may wish to stamp out a single row (or column) of long narrow tiles, making seamlessness an issue in only one direction" (Col. 7, lines 32-34), both of which indicate a periodic repetition of the tiles, not aperiodic, because the tiles are being "stamped" out.

In addition, *Jensen* describes the selection of the period along each axis as the distance along each axis "after which the values of the necessary portion of the rotated supertile 1400 begin to repeat." (Col. 6, lines 59-64.) "[A] rotated textured tile is generated using the X-period, Y-period, and a portion of the rotated supertile 1400", and the rotated textured tile is "aligned at a rotation of theta units to facilitate stamping" and to permit "seamless tiling." (Col. 7, lines 4-12.) *Jensen* describes the selection of "a period for each axis" by moving a window to successive positions until the desired degree of seamless is obtained. (Col. 7, line 66 - Col. 8, line 10.) These portions of *Jensen* describe how the rotated textured tile is generated and the use of the rotated textured tile for periodic tiling to avoid the appearance of seams. There is nothing in either the cited passages from the Office Action or any other part of *Jensen* that describes, teaches, or suggests an aperiodic tiling system as required by all Claims of the application.

In addition, the remaining claims recite one or more additional features that independently render the claims patentable over the art of record. For example, Claim 3 recites that:

"the step of covering the target area includes the steps of:

selecting an aperiodic tiling pattern;

generating a set of textured tiles based on said aperiodic tiling pattern; and

applying the textured tiles to the target area."

This feature is not described, taught, or suggested by *Jensen*.

Additionally, Claim 4 recites that:

"the step of applying the textured aperiodic tiles to the target area includes the steps of:

covering the target area with one or more aperiodic tiles, wherein the one or more aperiodic tiles are based on the aperiodic tiling pattern; and

mapping a corresponding textured tile to each of the one or more aperiodic tiles."

This feature is also not described, taught, or suggested by *Jensen*.

Regarding the rejection of Claims 6 and 14 over *Jensen* in further view of *Deutsch*, the latter reference also lacks any mention or suggestion of aperiodic tiling. *Deutsch* is directed toward a technique for developing an analytical model of an image based upon a pixel map. (Col. 2, lines 24-26). In contrast, Claims 6 and 14 are directed toward the use of an aperiodic tiling approach, which eliminates linear repetitions. Furthermore, the "tiles" referred to in *Deutsch* are merely sub-areas of the larger pixel image (Col. 2, lines 39-41; Col. 6, lines 30-31) and are not repeated in an aperiodic pattern as required by Claims 6 and 14. Thus, *Jensen* and *Deutsch*, either taken separately or in combination, fail to disclose, teach, or suggest the claimed invention. Accordingly, the Applicant respectfully submits that Claims 6 and 14 are allowable over the art of record and are in condition for allowance.

In view of the foregoing, the Applicant respectfully requests reconsideration and withdrawal of the rejections.

CONCLUSION

For at least the reasons set forth above, the Applicant respectfully submits that all of the pending claims are patentable over the citied art and are in condition for allowance. Therefore, the issuance of a formal Notice of Allowance is believed next in order, and that action is most earnestly solicited.

The Examiner is respectfully requested to contact the undersigned by telephone if it is believed that such contact would further the examination of the present application.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortages in fees due in connection with the filing of this paper, including extension of time fees, or credit any overages to Deposit Account No. 50-1302.

Respectfully submitted,
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